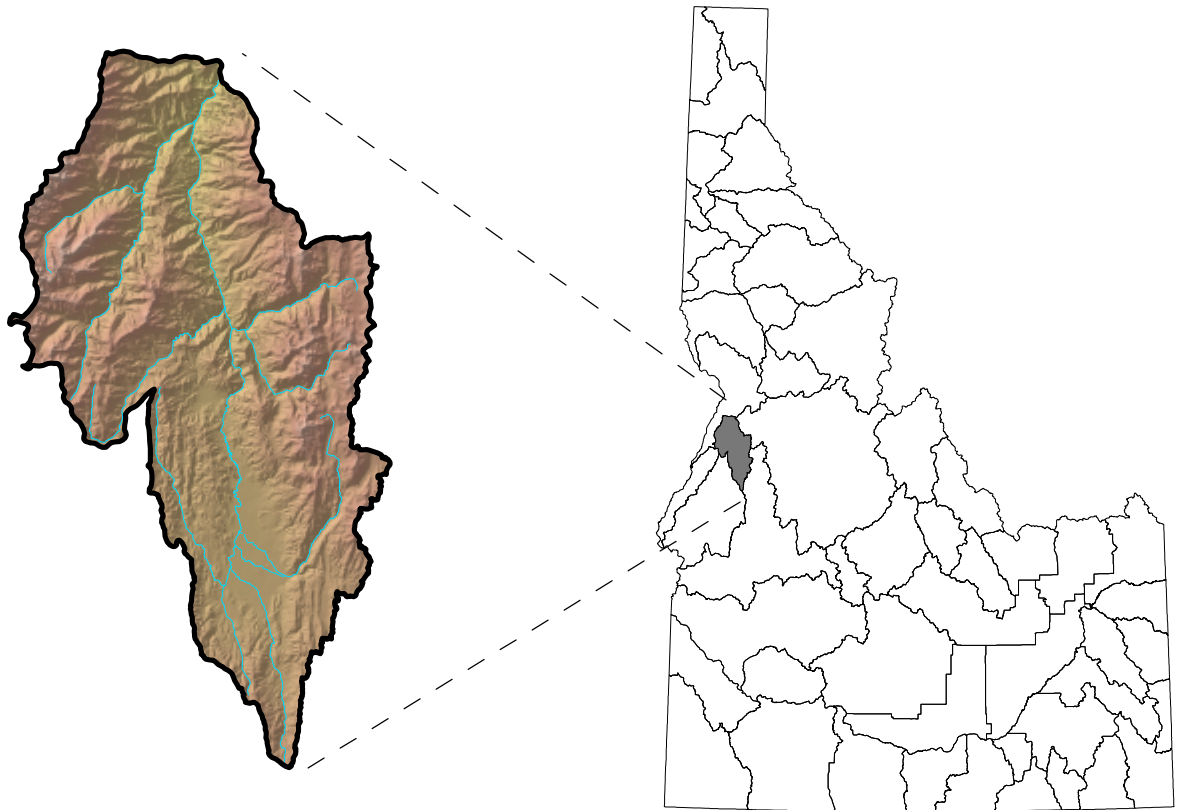


COMPREHENSIVE STATE WATER PLAN - PART B SUPPLEMENT

Little Salmon River Basin

Flood and Landslide Management Information



Idaho Water Resource Board
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Little Salmon River Basin Comprehensive State Water Plan – Part B Supplement — Flood and Landslide Management Information

1 Floods and Landslide History in the Basin

1.1 Basin Description

The Little Salmon River basin is located in northeastern Adams and southwestern Idaho Counties, and encompasses approximately 576 square miles. Basin elevations range from over 9,000 feet in the Seven Devils Mountain area and over 7,000 feet in the Hazard Creek area, to a low elevation of about 1,760 feet at Riggins. The basin is characterized by high mountains and deep valleys, with an upper basin of moderately sloped ranch lands in the New Meadows area. Major tributaries in the basin include Rapid River, Boulder Creek, Hazard Creek, Goose Creek, and Big Creek. Rapid River drains the eastern slopes of the Seven Devils and empties into the Little Salmon River near Riggins. Boulder Creek also drains a portion of the Seven Devils and empties into the Little Salmon River near Pinehurst. Hazard Creek drains a large portion of the eastern

side of the basin and joins the Little Salmon River south of Pinehurst. Goose Creek and Big Creek drain a large portion of the upper basin and enter the Little Salmon near New Meadows. These large tributaries, along with numerous smaller tributaries, contribute flows along the length of the 51 miles of the Little Salmon River. For additional information related to location, climate, hydrologic structure, geology and soils, along with maps and tables, refer to appropriate sections in the *Little Salmon River Basin Comprehensive State Water Plan*.

1.2 Floods

River flows are recorded for the Little Salmon River at the gage located at Riggins. Flow records have been kept since the gage was placed in service in 1948. Flood stage for the Little Salmon River is considered to be 10.0 feet at the gage, and since 1948, the river has been at flood stage nine times. Recorded flood stages are as follows in Table 1. Table 2 shows the USGS Flood Frequency Estimate for the Little Salmon River at Riggins for the period of record 1948-1999.

Table 1: Recorded flood stages – Little Salmon River

Date	Gage Height(feet) – Stage	Peak Flow(cfs)
May 23, 1967	10.49	6080
June 6, 1970	11.00	6960
May 13, 1971	10.12	5520
June 6, 1971	11.00	7500
January 16, 1974	11.00	9700
June 17, 1974	11.05	12,600
June 6, 1986	10.13	5740
May 18, 1996	11.18	7520
January 1, 1997	12.00	10,500

Note: The gage height vs. flow will change each time the gage is re-calibrated.
(Flow in cfs - cubic feet per second)

Table 2: USGS Flood frequency estimate: Little Salmon River at Riggins 1948-1999.

Recurrence Interval in Years ¹	2	5	10	25	50	100	200
Discharge in cfs	4930	6730	7910	9390	10500	11600	12700

¹ Example: A 100-year flood event has a Recurrence Interval of 100 Years.

1.3 Landslides

Idaho's geology and soils, when associated with steep topography, are conducive to landslides. Idaho's history of landslides in the 20th Century reflects this persistent hazard. Major landslide events have had a significant impact on transportation, communities, and natural resources in 1919, 1934, 1948, 1964, 1968, 1974, and 1997. We cannot prevent landslides, but we can in many cases act to mitigate (alleviate) hazards due to landslides. Up until now, most available resources have been directed toward repair and cleanup rather than mitigation. Locations of mapped landslides are shown in separate map sheets found by using the reference map (see Figure 4). Ages of landslides are not indicated by publication dates given for the various data sources.

2 Flood and Landslide Events

2.1 January and June 1974 Event

During November 1973, precipitation over 200 percent of normal for most of Idaho raised streams to unusually high stages for that month. Streamflow continued to be excessive during December, and in late December/early January 1974, heavy snowfall occurred throughout the Pacific Northwest. In mid-January (13-17) 1974, a warm moist airflow caused heavy rain and rapid snowmelt, resulting in extreme flooding in northern and central Idaho. Ice jams contributed to extensive overbank flooding, and new peak flows were established at a number of gauging sites in northern and central Idaho. Flood recurrence

intervals exceeding 100 years were recorded at some sites.

The Little Salmon River gage at Riggins recorded a peak flow of 9,700 cfs on January 16, 1974 and another higher peak flow of 12,600 cfs on June 17, 1974. The June 17 flow almost reached a 200-year event, which is 12,700 cfs for the Little Salmon River. A hydrograph of the Mean Daily Discharge for these events is shown as Figure 1.

2.2 December 1996/January 1997 Event

In mid-December 1996, cold Canadian air moved into northern, central and southern Idaho. Wet Pacific weather systems moving over this cold air brought considerable snow to central and southern Idaho. Boise received its second highest 24-hour snowfall (9.8 inches) on December 20, 1996. Both high and low elevation snowpack was well above normal. Rapid warming occurred beginning Christmas Eve as very warm, wet weather systems came into the area from the tropical region near Hawaii. This moisture stream persisted for days, not ending until early on January 3, 1997. Total rainfall amounts for the period December 24, 1996 through January 3, 1997 ranged from two to over six inches in the Little Salmon Basin. The heavy snow pack, combined with above normal temperatures and heavy rainfall, brought significant runoff in northern, central, and southern river basins. This caused rapid river flooding and detritus flows from supersaturated soils. A colder, drier air mass spread across the region beginning on January 3, 1997, and brought an end to the precipitation and snow melt.

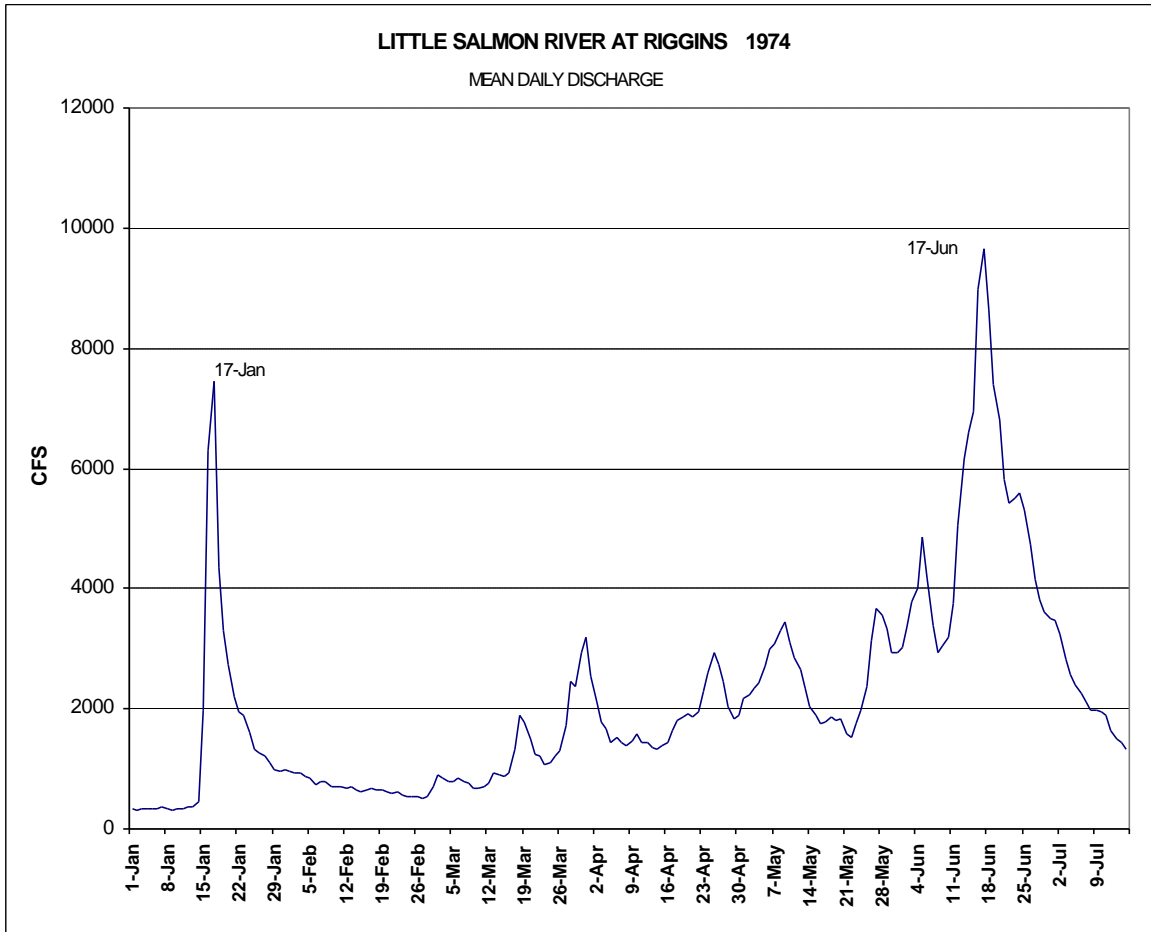


Figure 1. Mean daily discharge 1974.

The Little Salmon River gage at Riggins recorded a flow of 500 cubic feet per second (cfs) on December 28, 1996, at the beginning of the event, to a peak flow of 10,500 cfs on January 1, 1997. The peak flow of 10,500 cfs represents a 50-year flood event for the Little Salmon River, with a 100-year event being 11,600 cfs. By January 13, 1997, the flow at Riggins had dropped to 800 cfs as the flood receded. During the spring snowmelt, the

river reached a peak flow of 6,000 cfs on May 17, 1997. A hydrograph of the mean daily discharge for these events is shown as Figure 2.

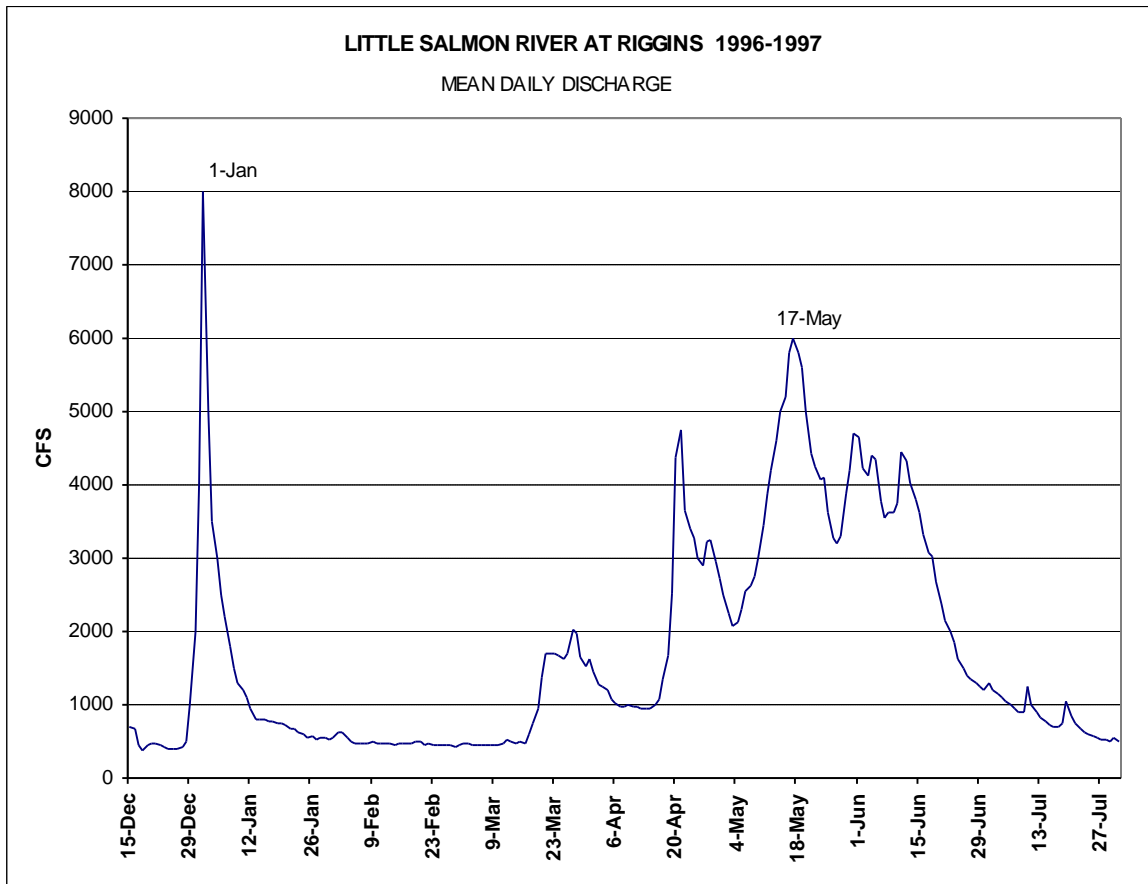


Figure 2. Mean daily discharge 1996-1997.

Figure 3 is a summary hydrograph for the years of record 1951-2000. The maximum and minimum flow lines indicate instantaneous extremes recorded during the years of record for each date shown. The percent exceedence lines (10 percent, 25 percent, etc.) indicate the flow that is equaled or exceeded a percentage of the time for the

dates shown. Flows in these lines are seven-day average recorded flows.

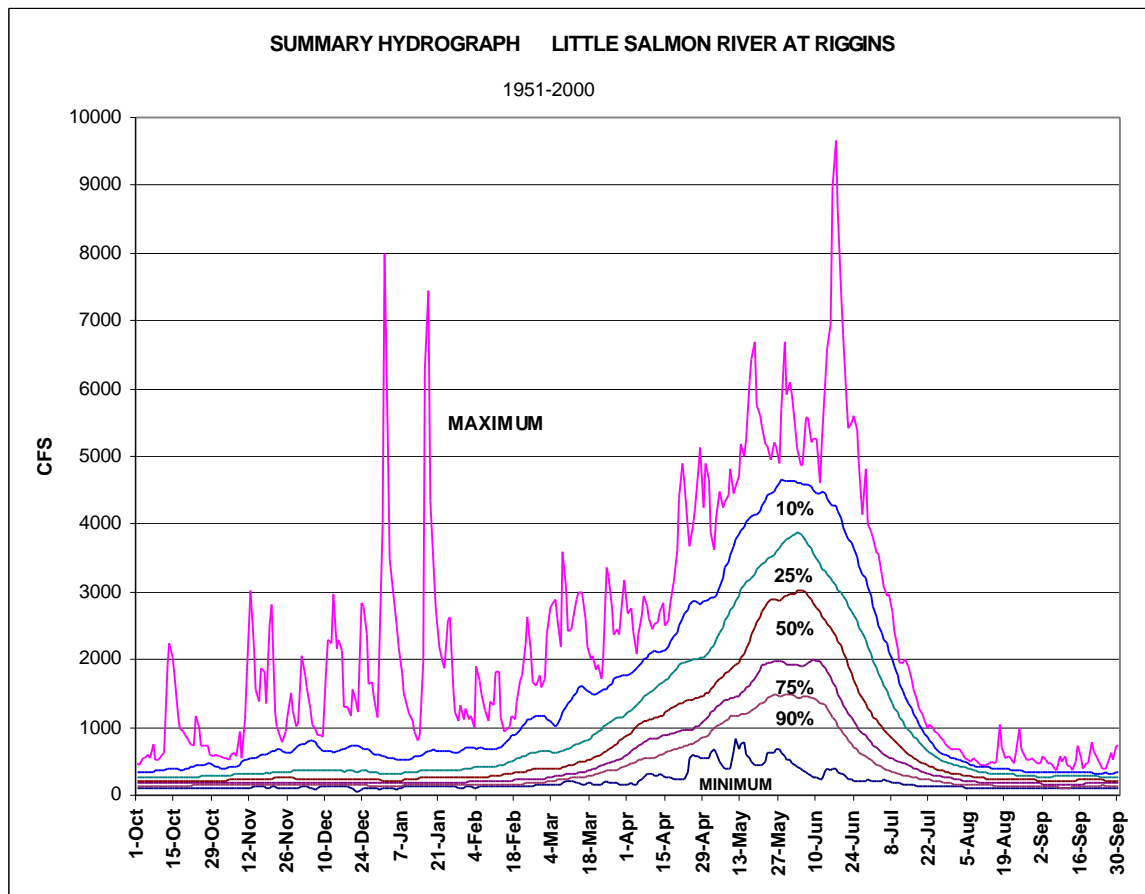


Figure 3. Summary hydrograph 1951-2000.

3 Landslide Impacts - 1996/1997 Event

Landslides occurred throughout southwestern and west-central Idaho during the 1996/97 event. The landslides were associated with heavy and prolonged precipitation, warm temperatures, and certain topographic, geologic, and soil characteristics. Landslides were "clustered" within particular areas or regions, and many seem to have been confined to elevations between about 3000 and 5000 feet. This observation suggests the importance of the unusually high freezing level and the effect of rainfall upon snow in triggering landslides. The effects of these failures include damage to and the resulting closure of highways, destruction of power

and telephone lines, buildings and vehicles, burial and flooding of irrigation facilities, and damming and sedimentation of rivers and streams.

The principal consequences of landslides in the Little Salmon River basin occurred directly at the site and downslope of the landslide, and in adjacent waterways. At the landslide site itself, property, structures, and habitat were directly impacted by the material carried by the slide. Landslides also changed topography, which in turn may increase future risk. Streams were affected downstream of landslides, chiefly by increased sediment inflows. Large amounts of material entered rivers and stream

channels, causing temporary or permanent flooding from debris and or gravel bars.

Along U.S. Highway 95 in the Little Salmon River basin, numerous rockfalls and mudflows, combining with flooding, completely closed the highway for about four days, and travel was restricted for about 11 days. Other areas impacted included public and private lands where buildings, roads, and other structures were damaged or destroyed. Damage estimates caused by flooding and landslides for this region exceeded \$3 million.

4 Federal, State, and Local Responses to 1996/1997 Event

4.1 Federal

On January 4, 1997, the President declared a major disaster in the state of Idaho due to severe winter storms, flooding, and landslides. Fourteen counties were initially declared eligible for federal assistance under FEMA-DR-1154-IDAHO. Four additional counties were declared later in the month of January, bringing the total number of federally-declared counties in this disaster to 17. On January 31, 1997, the President extended the incident period to November 16, 1996. For Adams County, Individual Assistance, and Public Assistance Categories A & B were declared on January 4, 1997, and on January 22, 1997 for Public Assistance Categories C & D, and Hazard Mitigation. Declarations for Idaho County were the same, except that Public Assistance Categories C & D, and Hazard Mitigation were declared on January 27, 1997.

4.2 State and Local

The State Bureau of Disaster Services (BDS) functioned as a coordination center during the disaster. The BDS coordinated with federal agencies, state agencies, and local communities for emergency response and restoration and mitigation work following the disaster.

Snow damage, flooding, and slope failures from this event resulted in a state disaster declaration, and a federal declaration of northern and western Idaho counties. Because of the isolation of communities and individuals, and widespread damage to roads and the environment, a task force convened with representatives from federal, state, and private interests. The purpose of the task force was to prepare recommendations to the governor regarding the hazard and what can be done to reduce the risk to Idaho's communities, infrastructure and resources. The task force first met on February 4, 1997 when goals were reviewed, a timeline set up, and committees established.

The task force completed its work and issued a report dated July, 1997: Governor's Landslide Task Force - Recommendations of Idaho Communities, Infrastructure, and Resources at Risk from Landslides and Related Events. The report included **Ten Recommendations** derived from committee reports and prioritized by the task force:

Recommendation 1. Implement a statewide landslide mitigation plan that would encourage and support local mitigation efforts.

Recommendation 2. Assess landslide hazards and produce landslide hazard maps of critical areas.

Recommendation 3. Implement avoidance measures for landslide-prone areas including (a) legislation, regulations, ordinances, and zoning to mitigate slope instability contributed by excavations and drainage; and (b) site investigations to define hazards.

Recommendation 4. Establish a lead agency to take responsibility for making emergency warning notification.

Recommendation 5. Initiate field-based, interdisciplinary technical studies of landslide processes to improve hazard assessment techniques.

Recommendation 6. Implement guidelines for activation of geotechnically-oriented rapid response teams.

Recommendation 7. Assist cities and counties with funding and technical assistance to implement mitigation activities.

Recommendation 8. Update and maintain existing statewide landslide database and provide for periodic surveillance in problem areas.

Recommendation 9. Implement a public awareness campaign about landslides.

Recommendation 10. Develop a method of prioritizing landslide mitigation projects.

The BDS has implemented a statewide mitigation plan (Recommendation 1). The Idaho Geological Survey has developed a database and collected landslide maps from a number of sources (Recommendation 2). Some work has been done on the other recommendations (3-10), but none of them have been completed.

5 Damage Assessment: December 1996/January 1997 Event

Throughout the Little Salmon River basin, farms, ranches, homes, businesses, highways and roads, and other public facilities were damaged or destroyed. Damages exceeded \$1.6 million in Adams County and \$2.5 million in Idaho County.

6 Current Flood and Landslide Management Activities

The National Flood Insurance Program administered by FEMA and IDWR, Floodplain Management Unit, is an active program for Adams and Idaho Counties, and the City of Riggins. The BDS continues to work on the Ten Recommendations of the Governor's Landslide Task Force. The U. S. Forest Service has active landslide management programs for both the Payette

and Nez Perce National Forest lands within the Little Salmon River basin. The Idaho Geological Survey continues to collect and distribute landslide maps and geological information in the basin. The Idaho Transportation Department has an active design and construction program for U. S. Highway 95 in the basin, along with their continual maintenance work. Sections of the highway are being re-designed and re-constructed as a result of the 1996/1997 event, as well as being upgraded to address flood and landslide hazards, and highway standards.

7 Floodplain Analysis

7.1 Flood Insurance Studies

Flood Insurance Studies are prepared by the Federal Emergency Management Agency (FEMA) to determine the flood hazard present in a community as well as the insurance zones that will be used to write flood insurance. The data in the Flood Insurance Study provides detailed and accurate flood hazard information that includes a written report containing a description of a community's flooding conditions, and flood profiles showing the 500, 100, 50 and 10-year flood elevations for each stream reach studied. The data is also used to produce flood maps for the insurance program. The authority for the Flood Insurance Studies is the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973.

There are two types of study approaches used: 1) the Approximate and 2) the Detailed. The Approximate Study is depicted as Zone A on the Flood Insurance Rate Maps, and delineates the 100-year floodplain boundaries. The Approximate Study generally involves little or no fieldwork, and the base flood (100-year) elevation or depths are not determined. The Detailed Study uses considerably more specific hydrologic and hydraulic engineering methods. The Detailed study is depicted as numbered A zones (A1-A30), AE, AH, and AO zones. Detailed survey work is conducted in the field, cross-

sections are used in a mathematical model (HEC-2 or HEC-RAS), and base flood (100-year) elevations are determined. This often will include delineation of a floodway and the 500-year floodplain.

Idaho County

A Flood Insurance Study for Idaho County was completed by FEMA in March 1989, and covered the unincorporated areas of the county. The hydrologic and hydraulic analyses were performed by the U.S. Army Corps of Engineers, Walla Walla District, and flood risk data for four creeks near Grangeville were prepared by the U.S.D.A.-Soil Conservation Service. Portions of the Clearwater, Little Salmon, and Rapid Rivers as well as portions of Slate, Sevenmile, Clear, Cottonwood, Race, and Papoose Creeks were studied by Approximate methods. On April 2, 1991, the results of the study were reviewed at the final meeting attended by FEMA, the U.S. Army Corps of Engineers, and the local community. The study was acceptable to the community. The final study is dated September 27, 1991, with accompanying Flood Insurance Rate maps.

Adams County

A Flood Insurance Study for Adams County was completed by FEMA on November 20, 2000, and covered the cities of Council and New Meadows, as well as the unincorporated areas. The hydrologic and hydraulic analyses for the study were performed by Woodward-Clyde under contract for FEMA, and were completed in December 1997. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to and agreed upon by FEMA and the communities. The results of the study were reviewed at the final Consultation Coordination Officer meeting held on March 9, 1999, and attended by representatives of Adams County, the City of Council, the City of New Meadows, and FEMA. No previous studies had been prepared for Adams County.

City of Riggins

A Flood Insurance Study for the City of Riggins has not been completed by FEMA. Flood Damage Prevention Ordinances for the city were developed and adopted, along with floodplain maps, based on the studies and maps done for Idaho County.

7.2 Floodplain Maps

Floodplain maps are the basis for implementing floodplain regulations. The maps vary in detail depending on several factors including the amount of historical data, the detail of the base topographic maps, the flood threat, and the floodplain development potential. There are three types of floodplain maps: 1) the Flood Hazard Boundary Map, 2) the Flood Insurance Rate Map, and 3) the Flood Boundary and Floodway Map. The Flood Hazard Boundary Map is a very generalized map issued to a community when they first join the National Flood Insurance Program. These maps do not include base flood (100-year) elevations. Flood Insurance Rate Maps are based on either Approximate or Detailed Studies, and generally include base flood (100-year) elevations, and flood zones. Flood Boundary and Floodway Maps delineate floodways, but do not give base flood (100-year) elevations, or flood zones.

Idaho County Floodplain Maps

Flood Insurance Rate Maps for the Little Salmon River in Idaho County were completed on September 27, 1991 and are based on the Approximate method used in the Flood Insurance Study for the county. These maps delineate the 100-year floodplain boundary as Zone A, and cover that portion of the Little Salmon River in Idaho County, as well as portions of Rapid River and several creeks. The 100-year peak discharge was determined to be 11,000 cubic-feet per second (cfs) at the gage near Riggins. Hydrologic analysis done by the Idaho Department of Water Resources in January 2001 determined the 100-year peak flow to be 11,600 cfs based on the additional years of record.

In addition, Flood Hazard Boundary Maps were prepared for Idaho County in 1980. The 1989 Flood Insurance Study and Approximate A maps, represents a more detailed analysis, and therefore, supersedes the Flood Hazard Boundary Maps.

Adams County Floodplain Maps

Flood Insurance Rate Maps for the Little Salmon River in Adams County were completed on November 20, 2000 and are based on the Approximate method used in the Flood Insurance Study for the county. These maps delineate the 100-year floodplain boundary as Zone A, and cover that portion of the Little Salmon River in Adams County, as well as portions of several creeks. For these maps, the 100-year peak discharge was 3,600 cfs at the City of New Meadows, and 6,600 cfs at Round Valley.

City of Riggins Floodplain Maps

A Flood Insurance Rate Map for the City of Riggins was completed on December 19, 1997. The map includes the floodplain for both the Little Salmon and Salmon River, and is based on the Approximate method used in the Flood Insurance Study for Riggins. The map includes a Zone A and a Zone C on the west side of both rivers.

Floodplain Maps

The Flood Insurance Rate Maps and Landslides are included as map sheets at the end of this document. Use Figure 4 (a reference map) to locate the area of interest.

7.3 Floodplain Ordinances

To participate in the National Flood Insurance Program administered by the FEMA, a community must adopt and enforce a floodplain management ordinance that regulates development in the community's floodplain. The two fundamental objectives of the National Flood Insurance Program are: 1) to ensure that new buildings will be free from flood damage; and 2) to prevent new developments from increasing flood damages on existing properties. It should be noted that the National Flood Insurance Program is but one component of a community's floodplain

management program, which includes the designation of a local Floodplain Administrator.

Adams County

Adams County Ordinance 1981-5 defines Floodplain under Article II, Section B, and development requirements for subdivisions within a floodplain under Article VI, Section F. In addition, Article VI, Section G addresses subdivision development in Areas of Critical Concern such as avalanche paths, unstable soils, floodplains, and other hazardous or unique areas.

Adams County Ordinance 1988-1 defines a Flood Hazard Area under Article I, Section B, and floodplain construction requirements under Article IV, Section G. These flood ordinances, along with the accompanying Flood Insurance Rate Maps, meet or exceed the minimum requirements to participate in the National Flood Insurance Program.

Idaho County

Idaho County adopted a Flood Damage Prevention Ordinance as Idaho County Ordinance #36 (Rev. 04/03/97) on April 14, 1997. This flood ordinance, with accompanying Flood Insurance Rate Maps, meets or exceeds the minimum requirements to participate in the National Flood Insurance Program. The ordinance applies to all areas of special flood hazard within the jurisdiction of Idaho County, except areas of special flood hazards located within the limits of any incorporated city within the county.

City of Riggins

The City of Riggins Ordinance No. 133 is their Flood Damage Prevention Ordinance and was approved on February 19, 1997. The City Council was appointed to administer and implement the ordinance. The ordinance, with the accompanying Flood Insurance Rate Map (one) applies to all areas of special flood hazards within the jurisdiction of the City of Riggins. The ordinance meets or exceeds the minimum requirements for participation in the National Flood Insurance Program.

8 Landslide Analysis

A landslide is defined as the downslope movement (sometimes sudden) of a volume of rock or earth due to a failure of the material. There are many different kinds of landslides, all with different names. For convenience, we use the term landslide to describe any downslope movement of surface materials, regardless of the type of material involved or the mechanism of movement (e.g., debris flow, rockslide, mudslide, etc.).

With a safe and stable slope, the slope mass is in equilibrium as long as the stresses in the slope do not exceed the strength of the material. However, if these stresses increase, or if the strength of the material decreases, a critical condition is surpassed and the slope fails. A common cause of failure is the infiltration of water into the slope, which usually leads to an increase in ground stresses and reduction of the soil's strength.

An understanding of the types of landslides that occur and the processes that cause slope movement is fundamental to assessing landslide hazard and evaluating potential mitigation measures. The simplest systems for classifying landslides are usually based upon the type of material mobilized and the type of movement. The types of movement include falls, topples, slides, spreads, and flows. The types of material include bedrock, debris (coarse material), and earth or mud (fine material).

Slope movements that are most likely to occur in Idaho and present hazards as a result of events like the 1996/1997 rain-on-snow event are debris and/or earth slides, spreads and flows. Although these types were locally the most common during the New Year's event, they are by no means the only types of slope failures that occurred, or that can be expected to occur in the future.

8.1 Natural Factors

Natural factors contributing to landslides include slope, surface and sub-soils, bedrock geology, vegetation, and climate. Generally, the steeper the slope is, the more prone it is

to landslide. Most slides occur on slopes of about 30 degrees, and landslides are rare on slopes steeper than 41 degrees. This relates to the angle of repose of soils, and to the higher shear strength of rock, which forms the steeper slope. In addition to slope steepness, the concavity of a slope greatly influences the likelihood of a landslide. A concave slope is generally more stable than a convex slope.

The properties of slope surface materials and their underlying geology are also key factors in determining landslide risk. The most important properties of the surface slope material are shear strength, hydraulic conductivity, and stratigraphy. How the shear strength varies with wetting, how water moves through porous materials, and layering of the slope material are important factors with respect to landslide risks.

Vegetation contributes to slope stability when roots increase the shear strength of the slope material, and plants remove water by evapotranspiration. If the water table in the hillslope is lower as a result of transpiration, the pore water pressures in the soil are lower, and the shear strength is higher, resulting in a more stable slope (all else being equal).

The climate of a region determines the frequency and magnitude of precipitation events that may trigger landslides. It also partially controls the processes of rock weathering, the type of vegetation that occupies the hillslopes, and the fire regime of the region. All of these elements influence landslide hazard, but it is the size and timing of precipitation events that have the greatest impact on landslide risk.

8.2 Human Activities

Some human activities and land uses are likely to increase the potential for landslides on steep slopes. These activities include road construction, timber harvesting, grazing, mining, and long-term fire suppression. As a group, these activities can contribute to slope instability by oversteepening marginally stable slopes, changing infiltration and subsurface water transmission, and

decreasing the protective role imparted by vegetation. In an inventory of over 700 landslides in the Payette River drainage, less than three percent occurred on undisturbed sites, whereas the rest were associated with forest disturbances including wildfire, timber harvesting and roads. However, it is the extreme storm events that are the dominant variable affecting landslide activity.

8.3 Landslide Triggers

Many factors contribute to landslides and the trigger events that initiate a particular slide. Typical triggering events include intense rainfall, rapid snowmelt, seismic activities, and the rapid removal of the slope toe material (by stream cutting or road excavation). In the case of the widespread landsliding associated with the 1996/97 event, the combination of unusually high precipitation and associated rapid snowmelt was the triggering event for most landslides. It is also likely that the associated stream flooding eroded the toes of some slopes causing some landslides.

Water can trigger landslides in several ways. Slopes that become partially saturated by an elevated phreatic line (ground water level) lose resistance to sliding because effective normal stress is reduced by the bouying effect of water. Stability is also reduced by the unbalanced seepage forces which must be opposed by the slope structure. Settlement caused by saturation increases pore pressure and reduces shear strength. Surface water that runs off before penetrating often causes progressive erosion in the form of mudflows and shallow sloughing. Often, a combination of these mechanisms will occur for a given landslide.

8.4 Landslide Maps

The Flood Insurance Rate Maps and Landslides are included as map sheets at the end of this document. Use Figure 4 (a reference map) to locate the area of interest. Ages of landslides are not indicated by publication dates given for the various data sources.

9 Current Flood and Landslide Management Responsibilities

9.1 Federal Government

Federal Emergency Management Agency

The mission of the FEMA is to provide leadership and support to reduce loss of life and property and to provide protection from all types of hazards. This is accomplished through a comprehensive, risk-based, all-hazards emergency management program consisting of mitigation, preparedness, response, and recovery. FEMA is divided into two parts: the National Flood Insurance Program, and Disaster Assistance for individuals, public facilities and local communities during and immediately following a flood event. During and immediately following a disaster, FEMA functions as a coordinating agency for disaster relief and administers federal funds for restoration and mitigation of flood damage. FEMA works closely with state and local agencies for administration of flood relief measures and the National Flood Insurance Program.

To accomplish this mission, FEMA's Mitigation Directorate developed a national mitigation strategy. Hazard identification and risk assessments are the foundations of this strategy. Among the tools FEMA uses in implementing this strategy are the flood maps. FEMA has conducted engineering studies and restudies throughout the United States, and has produced flood maps for more than 18,000 communities with flooding problems. The maps are vital in FEMA's work with state and local governments to mitigate the effects of flooding in their communities.

National Flood Insurance Program

The National Flood Insurance Program was created by Congress with the passage of the National Flood Insurance Act of 1968. The National Flood Insurance Program was

broadened and modified with passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994. The National Flood Insurance Program is administered by the Federal Insurance Administration and the Mitigation Directorate, components of FEMA. The program was created to minimize the ever rising disaster relief costs and to reduce the loss of life and property caused by flooding. The Program has four goals:

1. Provide flood insurance coverage not generally available in the private market.
2. Stimulate local floodplain management to guide future development.
3. Emphasize less costly nonstructural flood control regulatory measures over structural measures.
4. Reduce Federal disaster costs by shifting the burden from the general taxpayer to floodplain occupants.

The basic purpose of the National Flood Insurance Program is not to prohibit floodplain development, but to guide development in floodplain areas in such a way as to greatly lessen the economic loss and social disruption caused by impending flood events. The program enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

To participate in the National Flood Insurance Program, a community must adopt and enforce a floodplain management ordinance that regulates development in the community's floodplain. The two fundamental objectives of the National Flood Insurance Program are: 1) to ensure that new buildings will be free from flood damage, and 2) to prevent new developments from increasing flood damages on existing properties. It should be noted that the

National Flood Insurance Program is but one component of a community's floodplain management program. Another important component is development of a Flood Insurance Rate Map (FIRM). This map delineates a Special Flood Hazard Area or floodplain, where regulations apply. The map often includes the base flood (100-year event) elevations.

Important features of the National Flood Insurance Program are:

- Federal flood insurance is only available in those communities that participate in the National Flood Insurance Program.
- Flood insurance is required for federally-backed loans to purchase or build structures located in any special flood hazard area.
- In order to receive federal disaster assistance in identified floodplains, communities must participate in, and be in good standing with, the National Flood Insurance Program.
- Flood insurance can be purchased from any agent who is licensed to write property and casualty insurance.
- Flood insurance can be purchased for any walled or roofed building anywhere in a participating community regardless where the structure is located.
- The National Flood Insurance Program does not cover basement contents or finished portions of a basement.
- Rates are subsidized for pre-FIRM buildings, actuarial rates for post-FIRM structures.
- There is a waiting period of 30 days before coverage goes into effect.
- There is no waiting period when transferring titles of properties to new owners.

The Community's responsibilities under the National Flood Insurance Program are to:

- Require development permits for all proposed construction and other developments within the community's designated 100-year floodplain.
- Review the permit to assure that sites are reasonably safe from flooding.
- Review subdivision proposals to determine whether the project is safe from flooding and provides for adequate drainage.
- Require residential structures to have the lowest floor (including basement) elevated at least to or above the base flood (100-year event) elevation.
- Require non-residential structures to have the first floor elevated or flood proofed one foot above the base flood elevation.
- Require manufactured homes to be elevated and anchored.
- Require water supply systems be designed to eliminate infiltration of floodwaters.
- Require new and replacement sanitary sewage systems be designed to minimize or eliminate infiltration of flood waters.
- Assure flood carrying capacity of altered or relocated watercourses is maintained.
- Maintain records of all development permits.
- Verify/document first floor elevations of new or substantially improved structures.

A recent study showed that only two percent of the claims paid for flood damages are for structures built after the date of a community's flood map and adoption of a local Floodplain Management ordinance, whereas 98percent of the claims paid are for flood damages to structures built before adoption of a local Floodplain Management ordinance. This is strong evidence that the National Flood Insurance Program is successful at protecting new developments.

Effects on Lenders

The purchase of flood insurance applies to all mortgage properties which fall under one of the following three criteria: 1) the owner is applying for a federally backed (VA, FHA, etc.) loan; 2) the lending institution is federally regulated; or 3) the loan will be sold on the secondary market to a government sponsored enterprise such as Fannie Mae or Freddie Mac. This comprises well over 95percent of all mortgage loans made each year.

The lender must first determine whether the structure is in a Special Flood Hazard Area. This is done using an approved Standard Flood Hazard Determination Form.

For all properties located in a Special Flood Hazard Area, lenders must require flood insurance when making, increasing, extending, or renewing a loan. This requirement only applies when the structure is in the flood hazard area, not the lot. Lenders must ensure that coverage remains in effect for the life of the loan. A government sponsored enterprise such as Fannie Mae or Freddie Mac must ensure that any loans they purchase have flood insurance, if required.

If a loan has escrows for taxes, insurance, or for any other reason, the lender must then escrow for flood insurance too. Lenders are required to notify borrowers if their building is in a flood hazard area, and that they have 45 days to purchase flood insurance. If a borrower believes the flood zone determination was in error, the borrower and the lender must jointly request a review from FEMA, with appropriate supporting technical information.

Floodplain Management Concepts

Flooding is a natural occurrence. Periodically, rivers, streams, and lakes will overflow their banks and inundate land areas. These areas, known as floodplains, temporarily store this excess water. Flood damages only arise when man interferes with the natural flooding process by altering the watercourse, developing areas in the upper

watershed, and/or building inappropriately in the floodplain itself.

The traditional solution to flood problems has been to construct structural protection works such as dams, diversions, levees, and floodwalls. Despite tremendous expenditures for these structural projects, economic flood losses have continued to increase year after year. Given this, governments at every level have begun to see the solution to avoiding flood damages lies not in keeping the water away from people, but rather in keeping people away from the water. This philosophical shift led to the creation of the National Flood Insurance Program in 1968, thereby codifying the concept of floodplain management.

The Base Flood

The base flood is sometimes referred to as the 100-year flood; a flood that has a one percent chance of occurring in any given year. Although a 100-year flood sounds remote, it should be kept in mind that over the life of an average 30-year mortgage, a home located within the 100-year floodplain has a 26 percent chance of being inundated over the life of the mortgage. The same home has less than a one percent chance of fire damage during the same period.

What is more significant is that the house in this example is almost certain to experience a 10-year flood (96 percent chance) in the same 30-year mortgage cycle. In many areas the difference for flood heights between a 10-year and a 100-year event may be as little as one foot.

The base flood elevation is the elevation which the base flood is expected to reach at any point along the waterway. For purposes of the National Flood Insurance Program, the area that would be inundated by the base flood is also called the Special Hazard Area, or simply the floodplain. The floodway is typically the channel of a river or stream and the overbank areas adjacent to the channel. Regulations require that floodways be kept open so that flood flows are not obstructed or diverted onto other properties. The flood

fringe is the area on either side of the floodway, and is subject to inundation by the base flood. Floodplains are low-lying areas, which seem to invite filling activities. Filling is included under the National Flood Insurance Program definition of "development" and therefore requires a floodplain development permit. Fills, if permitted, should be designed to ensure that they will not alter drainage or divert flood flows to other properties.

Floodplain Maps

Floodplain maps are the basis for implementing floodplain regulations. The maps vary in detail depending on several factors including the amount of historical data, the detail of the base topographic maps, the flood threat, and the floodplain development potential. There are three basic types of floodplain maps. For floodplain maps of the Little Salmon River basin, see Figure 4.

The Flood Hazard Boundary Map is a very generalized map usually issued to a community when they first join the National Flood Insurance Program. These maps do not include base flood Elevations. The Flood Insurance Rate Maps generally include base flood elevations and flood zones, and are based on a detailed study. They may also include regulatory floodways. Flood Boundary and Floodway Maps delineate floodways, but do not give base flood elevations or flood zones.

The Flood Insurance Study

Flood Insurance Studies are prepared by the Federal Emergency Management Agency to determine the flood hazard present in a community as well as the insurance zones that will be used to write flood insurance. The data in the Flood Insurance Study provides detailed and accurate flood hazard information that includes a written report containing a description of a community's flooding conditions, and flood profiles showing the 500, 100, 50 and, 10-year flood elevations for each stream reach studied. The

data is also used to produce flood maps for the insurance program.

There are two types of study approaches used: 1) the Approximate, and 2) the Detailed. The Approximate Study is depicted as Zone A on the Flood Insurance Rate Maps, and delineates the 100-year floodplain boundaries. The Approximate Study generally involves little or no fieldwork, and the base flood (100-year) elevation or depths are not determined. The Detailed Study uses considerably more specific hydrologic and hydraulic engineering methods. The Detailed study is depicted as numbered A zones (A1-A30), AE, AH, and AO zones. Detailed survey work is conducted in the field, cross-sections are used in a mathematical model (HEC-2 or HEC-RAS), and base flood (100-year) elevations are determined. This often will include delineation of a floodway and the 500-year floodplain.

Flood Hazard Mitigation

Many communities have developed a stand-alone hazard mitigation plan that identifies the hazard threat and then tailors a range of non-structural, structural, and land-use regulatory activities to significantly decrease the damage and economic loss caused by future flooding. Floodplain Management Ordinances are adopted by communities in order to participate in the National Flood Insurance Program. Many communities go beyond minimum requirements of the National Flood Insurance Program and adopt higher regulatory standards in their flood ordinances. These standards may include zoning, subdivision development regulations, building codes, stormwater regulations, comprehensive land use plans, and flood proofing existing structures. The National Flood Insurance Program Community Rating System recognizes community floodplain management efforts that go beyond the minimum requirements by reducing flood insurance premiums for the community's property owners. Discounts to premiums can range from 5 percent to 45 percent.

In some instances, it is more cost effective for governments to purchase repetitively

flooded houses and demolish or move them, than it is to constantly pay out disaster assistance and flood insurance claims. Once demolished or moved, the now cleared land is deed restricted as open space and may be converted to a park, or reverted back to its natural state. Since 1993, FEMA has funded the acquisition of some 20,000 homes and businesses located in frequently flooded areas through out the country.

Next to acquisition or relocation, raising an existing structure above the flood level is the next best solution to protecting a structure from flood damage. Flood proofing a building by sealing it against floodwaters or avoiding extensive damage by elevating vulnerable equipment, electrical controls, furnaces and water heaters above the flood levels are other good methods. Sewers and water lines should also be flood proofed.

The best way to prevent flood damage is to keep the floodplain free of development. Local governments and community groups can purchase flood prone lands and set them aside for open space, recreational uses or wildlife habitat. Easements purchased on private property can prohibit building in the floodplain, but still allow activities such as farming, ranching, or other uses. Capital improvement plans detail where major public expenditures are to be made over the next 5 to 20 years, and include funding decisions for such things as acquiring parkland, and improving roads, bridges, and utilities. These publicly funded projects should be geared, first and foremost, to avoiding the natural hazard threat. If the hazard cannot be totally avoided, then projects should be constructed in such a way as to minimize the damage that will occur when disaster strikes.

The Community Assistance Visit

Approximately every two to four years, the federal or state flood insurance coordinator will visit communities in the National Flood Insurance Program and conduct a Community Assistance Visit. The purpose of the visit is to assist the local floodplain coordinator and other local officials in enforcing the community's floodplain

management ordinance. The visit also seeks to evaluate the local floodplain management program regarding the regulations governing the National Flood Insurance Program. A visit includes the following: 1) a meeting with local staff to discuss procedures used in issuing development permits and reviewing permit files; 2) a check of building permits and elevation documentation to see if new development is being regulated according to the requirements of the local code; and 3) a tour of the flood hazard areas. A follow-up letter is sent to the chief elected official, and a report is filed with the Federal Emergency Management Agency on the findings of the visit.

Cooperating Technical Community Program

The Cooperating Technical Community (CTC) program is an initiative to help local and state governments become involved with the flood study mapping program on a first hand basis. In this program, FEMA provides assistance to local or state governments to perform every aspect of the flood study process of the National Flood Insurance Program; from selection of the study areas to holding the public meetings when the study is finished. The assistance could involve funding, training and technical assistance. With this program, each community will have a greater understanding of the mapping program and will retain greater ownership of the products.

U. S. Army Corps of Engineers

The Corps has several programs to address flooding concerns. Local authorities can request assistance under Section 205 of the Flood Control Act of 1948 as amended. Maximum federal expenditures for the planning, design, and construction of any one project under this authority are limited to \$7 million. Study costs are shared 50/50 between the Corps and the non-federal sponsor, and construction costs are shared 65/35 (federal/non-federal). Larger flooding concerns can also be addressed through congressional authorizations. Any studies specifically authorized are cost-shared 50/50

with the Corps and the non-federal sponsor. Construction costs would be cost shared 65/35 (federal/non-federal). Local residents can also request planning assistance through the Planning Assistance to States and Tribes Program, which is cost-shared 50/50 between the Corps and the non-federal sponsor.

Section 404 Permits

U.S. Army Corps of Engineers permits are required under Section 404 of the Clean Water Act for discharges of dredged or fill material into waters of the United States, including wetlands. This includes excavation activities that result in the discharge of dredged material and destroy or degrade waters of the United States. U.S. Army Corps of Engineers permits are also required, under Section 10 of the Rivers and Harbors Act of 1899, for work or structures waterward of the ordinary high water mark of, or affecting, navigable waters of the United States. In Idaho, navigable waters do not include the Little Salmon River. Rules and regulations governing the U.S. Army Corps of Engineers permit program are provided in Title 33 of the *Code of Federal Regulations, Parts 320-330*. Adams and Idaho counties are administered by the Walla Walla District, U.S. Army Corps of Engineers.

Individual Permits

There are two types of individual U.S. Army Corps of Engineers permits: Standard Permits and Letters of Permission. Standard Permits include a public interest review, opportunity for a public hearing, and preparation of an environmental document. Letters of Permission involve a more abbreviated processing without a full public interest review. For Letters of Permission, the U.S. Army Corps of Engineers coordinates with federal and state fish and wildlife agencies and other agencies without publishing a public notice.

General Permits

In many cases, the formal processing of a permit application is not required because General Permits are already issued to the public by the U.S. Army Corps of Engineers.

Separate applications may or may not be required for General Permits. There are two types of General Permits: Regional General Permits and Nationwide Permits. Regional Permit NPW-27 has been issued for activities within the State of Idaho. Nationwide Permits are issued on a nationwide basis for certain minor activities such as bank stabilization, outfall structures, maintenance of existing flood control facilities, boat ramps, recreational facilities, and agricultural activities. There are 44 listed minor activities that fall under the Nationwide Permits. Projects authorized by U.S. Army Corps of Engineers General Permits still need to be approved by the State of Idaho under their Stream Alteration Permit program.

Joint Application

A Joint Application may be used for three separate permits: a U.S. Army Corps of Engineers permit from the U.S. Army Corps of Engineers, Stream Channel Alteration permit from the Idaho Department of Water Resources, and a Lake Encroachment permit from the Idaho Department of Lands.

U.S. Department of Agriculture Farm Service Agency

Flood Risk Reduction Program

This program was established to allow farmers who voluntarily enter into contracts to receive payments on lands with high flood potential. In return, participants agree to forego certain USDA program benefits. These contract payments provide incentives to move farming operations from frequently flooded lands.

U.S. Department of Agriculture Forest Service

The U. S. Forest Service has the ability to fund its own flood and landslide recovery and non-recovery activities such as flood and landslide mitigation work and studies. An important limitation on this funding is that it is restricted, with a few exceptions, to activities on Forest Service lands. In addition, the Forest Service has technical expertise available to offer time, equipment,

and assistance for flood and landslide studies and evaluations without limitation due to jurisdictional boundaries. It should be noted, however, that there exists little or no funding to support such activities and, therefore, cooperative funding arrangements would be necessary before the Forest Service could participate in such work beyond their own boundaries. A specific program conducted by the Forest Service is the **Watershed Restoration Program**. This program was established to study landslides in the federal watersheds and to identify highest priority projects through watershed analysis.

U.S. Department of Agriculture Natural Resources Conservation Service

Snow Survey and Water Supply Forecasts

The purpose of this program is to provide western states and Alaska with information on future water supplies. The Natural Resources Conservation Service (NRCS) field staff collect and analyze data on depth and water equivalent of the snowpack at more than 1,200 mountain sites and estimate annual water availability, spring runoff, and summer streamflows. Individuals, organizations, and state and federal agencies use these forecasts for decisions relating to agricultural production, fish and wildlife management, municipal and industrial water supply, urban development, flood control, recreation, power generation, and water quality management. The National Weather Service includes the forecasts in their river forecasting function.

The objectives of the program are to:

- Provide water users with accurate forecasts of surface water supply within the first five working days of each month; January - June.
- Efficiently obtain, manage, and disseminate high quality information on snow, water, climate, and hydrologic conditions.

- Develop and apply technology necessary to meet changing needs of water users.

Emergency Watershed Protection

The purpose of this program is to undertake emergency measures, including the purchase of floodplain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood, or any other natural occurrence is causing, or has caused, a sudden impairment of the watershed.

It is not necessary for a national emergency to be declared for an area to be eligible for assistance. Program objective is to assist sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized streambanks, establish cover on critically eroding lands, repairing conservation practices, and the purchase of floodplain easements. The program is designed for installation of recovery measures.

Watershed Surveys and Planning

The purpose of the program is to assist federal, state, and local agencies, and tribal governments to protect watersheds from damage caused by erosion, floodwater, and sediment, and to conserve and develop water and land resources. Resource concerns addressed by the program include water quality, opportunities for water conservation, wetland and water storage capacity, agricultural drought problems, rural development, municipal and industrial water needs, upstream flood damages, and water needs for fish, wildlife, and forest-based industries.

Types of surveys and plans include watershed plans, river basin surveys and studies, flood hazard analyses, and floodplain management assistance. The focus of these plans is to identify solutions that use land

treatment and nonstructural measures to solve resource problems.

Watershed Operations-Small Watershed Program and Flood Prevention Program

The Small Watershed Program works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis. Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance is available.

Rehabilitation of Aging Dams

The President signed into law The Small Watershed Rehabilitation Amendments of 2000 (*Section 313, PL 106-472*) on November 9, 2000. This legislation authorized the USDA Natural Resources Conservation Service (NRCS) to work with local community leaders and watershed project sponsors to address public health and safety concerns and environmental impacts of aging dams. Only dams constructed under USDA assisted water resource programs qualify for rehabilitation assistance:

- Small Watershed Program (*PL-534 Flood Control Act of 1944 and PL-566 Watershed Protection and Flood Prevention Act*)
- Pilot Watershed Program (1952-1954)
- Resource Conservation and Development Program

The legislation provides authorization only. Funds must be appropriated annually through Congress. The legislation authorizes up to \$90 million over the next five years, with cost sharing of 65 percent federal and 35 percent local sponsors. Rehabilitation work includes repairs from catastrophic storms, deterioration of components of the dam, extending the life of the dam, upgrades to

meet state dam safety standards, and removal of the dam. Federal funds cannot be used for operation and maintenance activities. Local sponsors can request assistance from their local NRCS office.

U.S. Department of Commerce Economic Development Administration

The Economic Development Administration is responsible for the **Flood Recovery Program**, which is designed to provide economic development planning and implementation for long-term economic recovery to areas impacted by disasters. Eligible recipients for such funds include states, communities, cities, counties, and planning and development organizations. Included under this program are planning and strategy grants, technical assistance grants, revolving loan fund grants, and infrastructure grants for critical public facilities.

U.S. Department of the Interior Bureau of Land Management

The Bureau of Land Management has the ability to fund flood and landslide recovery programs on their lands within the Little Salmon River basin. These activities would include reconstruction of roads, restoration of damaged lands, and changes to grazing and other land management practices.

U.S. Department of the Interior Geological Survey

The Geologic Division of the U.S. Geological Survey has a **Landslide Hazard Program** designed to help states deal with emergency issues. The U.S. Geological Survey also collects, analyzes, archives, and disseminates data and information describing the surface-water resources of the nation. Throughout the country, the U.S. Geological Survey stations equipped with real-time telemetry are integral components of reservoir operations and river-forecast and flood warning systems. River and stream gages, such as the one on the Little Salmon River at Riggins, record both river stage (gage height) and flow (discharge) data. Real-time river stage and discharge, along

with historical data, is available from their Surface Water Information Webpage, and U.S. Geological Survey publications. Federal, state, and local agencies use the river-stage data to forecast river conditions and to issue flood warnings and river-condition statements. The **National Flood-Frequency Program** provides estimates of the magnitude and frequency of flood-peak discharges and flood hydrographs. These estimates are used for a variety of purposes, such as design of bridges, culverts, and flood-control structures, and for the management and regulation of floodplains.

The U.S. Geological Survey took over responsibility for mapping the country in 1879 and has been the primary civilian mapping agency of the United States ever since. The best-known topographic maps produced are the 1:24,000 scale, or 7.5-minute quadrangle maps. Flood-prone areas are outlined on the 7.5-minute quadrangle maps as part of the federal program for floodplain management. This is the only uniform map series that covers the entire area of the United States in considerable detail. Orthophotoquads are black and white photographic image maps that are produced in standard 7.5-minute quadrangle format from aerial photographs. Geologic maps can be used to identify geologic hazards, locate natural resources, and facilitate land-use planning. In all, the USGS produces more than 80,000 different maps that are useful in flood, landslide, and other land management activities.

U. S. National Oceanic and Atmospheric Administration National Weather Service

The National Weather Service provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property, and the enhancement of the national economy. National Weather Service data and products form a national information database and infrastructure, which can be used by other governmental agencies, the private sector, the

public, and the global community. It is accomplished by providing warnings and forecasts of hazardous weather, including thunderstorms, flooding, hurricanes, tornadoes, winter weather, tsunamis, and climate events. The National Weather Service is the sole United States official voice of issuing warnings during life threatening weather situations.

Extreme weather warning categories include severe thunderstorms, flash flood, flood, and winter storm. Within the National Weather Service, the Office of Hydrologic Development provides flood warnings as part of their Integrated Flood Observing and Warning System. Flood warning information is provided by radio, TV, the news media, and on their website.

U.S. Department of Transportation Federal Highway Administration

The Federal Highway Administration has three transportation funding programs which, depending on the circumstances, may be available to address flood and landslide related activities. The **Federal Aid Program** is an annual distribution of funds to states to support a wide range of transportation system projects and activities. These program funds are used for highway construction, improvement, and rehabilitation work. Typically, the funds require a state match of 8 percent, although this percentage will vary from 0 percent to 20 percent depending on the specific type of program to be funded.

The **Emergency Relief Program** is an established funding program available for the repair or reconstruction of highways, roads, and trails that have suffered serious damage as the result of a natural disaster over a wide area, or a catastrophic failure. These funds are available as requested by a state in conjunction with a governor's declaration of a disaster, or for a major disaster declaration by the President. The state match is zero percent during the first 180 days after the disaster for emergency repairs, and approximately eight percent for all permanent restoration work.

The **Emergency Relief-Federally Owned Program** is directed towards federally owned roadways. More specifically, the program covers roads under the jurisdiction of the Bureau of Land Management, the U.S. Forest Service, and several other federal agencies. This program does not require a governor's declaration of state of disaster, and there is no required state match for the federal funds.

9.2 State Government

Idaho Water Resource Board

The Little Salmon River Comprehensive State Water Plan (Part B) includes flood control and floodplain management as one of its goals and objectives. In addition, the Board was requested to determine which areas of the basin are prone to land movements (slides and slippages).

Idaho Department of Water Resources

Water Planning Bureau

To assist the Idaho Water Resource Board, the Legislature provided for the director of the Department of Water Resources to perform duties and functions as needed for the Idaho Water Resource Board to carry out its powers and duties. The Water Planning Bureau develops comprehensive state water plans to meet the policies, goals, and objectives of the Board.

Floodplain Management Unit

The State Floodplain Coordinator is responsible for coordination of the Federal Emergency Management Agency's National Flood Insurance Program. The State Floodplain Coordinator operates under a contract between FEMA and the Idaho Department of Water Resources. FEMA does not have an office in Idaho, and the state contract is with FEMA's Region 10 office in Bothell, Washington. At the present time, there are 160 Idaho communities in the program with local floodplain coordinators. The contract is divided into nine Work Tasks as follows:

Work Task #1 - Community Assistance Visits

The purpose of the Community Assistance Visit is to conduct a comprehensive assessment of the local floodplain management program, and to assist the community in understanding the National Flood Insurance Program and implementing effective flood loss reduction measures. The assistance visit will consist of a tour of the flood hazard areas within the community and a meeting with local floodplain management program officials. The Community Assistance Visit process provides a means of gauging community progress and a method of providing plan-effective training programs for local officials. One copy of the Community Assistance Visit Narrative Report, the follow-up letter to the community, and any supporting documentation is transmitted to the Mitigation Division of the FEMA regional office within 30 days of the Community Assistance Visit.

Work Task #2 - Community Assistance Contact

The Community Assistance Contact is a scheduled brief visit or telephone call to a National Flood Insurance Program community to establish or reestablish contact to determine if any program-related problems exist and to offer assistance. This task is also considered a screening tool to determine which communities should receive the level of attention afforded by a Community Assistance Visit. Because a Community Assistance Contact is intended to be less comprehensive than a Community Assistance Visit, a Community Assistance Contact should be made for as many communities as possible that do not receive a Community Assistance Visit.

All communities that have a Flood Insurance Rate Map with base flood elevations will be contacted at least once every two years. Those communities that are identified as having problems from a previous Community Assistance Contact will receive another contact the following year if a Community

Assistance Visit is not scheduled. Those communities having only minimal flooding (no flood elevations) and those communities in the emergency program will receive a Community Assistance Contact every three years. One copy of the Community Contact Report, and any other documentation, will be sent to the Mitigation Division of the FEMA regional office within 30 days of the Community Assistance Contact.

Work Task #3 - Floodplain Ordinance Assistance

Under this task, assistance is provided to communities in preparing and adopting floodplain management regulations to achieve compliance with the minimum standards of the National Flood Insurance Program. Assistance is also provided to update a non-compliant ordinance, to update an ordinance to reflect National Flood Insurance Program regulatory changes, or to reflect new data. A chronology of contacts and the assistance provided, and a summary report with the adopted certified floodplain management ordinance and other attached documentation, is transmitted to the Mitigation Division of the FEMA regional office within 30 days of the ordinance adoption.

Work Task #4 - Community Training Sessions

Turnover of community floodplain administrators can have a large effect on the continuity of a community's floodplain management program. Often, the old administrator leaves without any instructions or training for the new administrator. Training is provided to the new floodplain administrator to insure the community's floodplain program is continued at the current level. Normally, community training sessions will be conducted as requested by the communities. A report, along with an attendance list, is submitted to FEMA after each session.

Work Task #5 - Post Disaster Assistance

Immediate post-disaster assistance offers unique opportunities for minimizing future

flood losses and reduces the vulnerability of communities to recurring flood disasters. Post disaster assistance activities address immediate technical assistance needs of the National Flood Insurance Program communities and complements the process of planning and implementing future mitigation actions. The following examples of community assistance may be conducted as part of this task:

- Assist communities with enrollment in the National Flood Insurance Program.
- Assist communities with preparing, updating, and/or adopting floodplain management regulations.
- Provide National Flood Insurance Program technical assistance to local officials in administration and enforcement of the communities Flood Damage Prevention Ordinances.
- Conduct or participate in National Flood Insurance Program-related workshops.
- Participate on Interagency Hazard Mitigation Teams.
- Assist with identifying substantially damaged structures and with administering the substantial damage regulatory requirements.
- Assist and/or provide guidance with integrating flood loss reduction concepts, standards, and flood hazard management techniques into mitigation plans and programs.

Work Task #6 - Coordination Meetings

In order to keep abreast of the latest developments in the National Flood Insurance Program and to be effective in working with community officials, there is a need for close correlation between state and FEMA regional personnel. Program coordination meetings provide planning, instruction, and training opportunities for the State Coordinator. Normally, the State Coordinator will attend at least two scheduled meetings each year with representatives of FEMA for the purpose of

sharing floodplain management information, and for coordinating activities.

Work Task #7 - Community Rating System

FEMA has created the Community Rating System as an integral part of the National Flood Insurance Program. The goals of the Community Rating System are to encourage, by the use of flood insurance premium adjustments, community and state activities beyond those required by the National Flood Insurance Program to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. The State Coordinator responds to Community Rating System information inquiries from National Flood Insurance Program communities and clientele groups, and provides assistance to communities requesting help in the preparation of their Community Rating System applications.

Work Task #8 - Publications, Newsletters, and Website

There is a need to disseminate information on the National Flood Insurance Program to public and private sectors. These activities may be conducted on a community-wide basis or for specific audiences such as local officials (building code and zoning officials, planners, and engineers), local emergency management personnel, civic groups and clubs, building industry trade associations, and residents who live in the floodplain. The State Coordinator publishes and distributes, on a quarterly basis, newsletters to approximately 800 community, state and federal agencies, lending institutions, insurance companies, and private individuals. Task activities may also include the development of audio-visual materials, brochures, handouts, and/or other appropriate information dealing with flood hazards and their management.

The State Coordinator distributes the publication, "Floodplain Management in Idaho," and maintains an Idaho Department of Water Resources web page containing

information on the National Flood Insurance Program.

Work Task #9 - General Technical Assistance

The State Coordinator responds to requests for information or assistance relating directly to the National Flood Insurance Program from various constituencies that are received by telephone, in writing, or in person. A summary report of the types and quantity of inquiries, or requests for assistance, is prepared and sent to the Mitigation Division of the FEMA Regional Office within 30 days of the quarter's completion.

Stream Channel Unit

Work in all continuously flowing streams within Idaho requires a Stream Alteration permit from the Idaho Department of Water Resources, unless the work is exempted. The permit is required by the *Idaho Stream Channel Protection Act, Title 42, Chapter 38, Idaho Code*. The Act requires that the stream channels of the state and their environment be protected against alteration for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, and water quality. A stream channel alteration is any activity that will obstruct, diminish, destroy, alter, modify, relocate, or change the natural existing shape or direction of water flow of any stream channel. A Joint Application can be made for this permit, U.S. Army Corps of Engineers permits, and Idaho Department of Lands permits. Adams County, and that portion of Idaho County in the Little Salmon River basin is administered by the Western Region of IDWR.

Flood Control Districts

Flood Control Districts were authorized by the Idaho Legislature in the Flood Control District Act of 1971 for the purpose of protection of life and property from floods. The policy of the state in this act is to provide for the prevention of flood damage in a manner consistent with the conservation and development of water resources. The districts are composed of any portion of a county, or counties, requiring flood control,

and are assigned a number by the Department of Water Resources. The districts are established by petition of the voters residing in the territory of the district, and are divided into three or more divisions. The divisions are established to provide adequate representation of all the interests within the district. The districts may establish reservoirs, dams, levees, dikes, powerplants, irrigation and drainage improvements, alterations to existing waterways or rivers, and the removal of natural obstructions within the waterways. Districts may be consolidated if they are contiguous, may be dissolved, and a division within a district may be excluded from the district by petition of the qualified electors residing in the division.

The floodplains for these districts are not restricted to the 100-year event, but also include side creeks, channels, wetlands, and land prone to flooding. The districts obtain funding through taxes on property in the flood areas of the district, and are required to file a financial statement each year. The districts have the power of eminent domain in the construction, operation, and maintenance of its structures, waterways, dikes, dams, basins, or any other use necessary in carrying out their responsibilities. The districts are required to obtain permits for any work in the floodplains. These may include a Lake Encroachment permit from the Idaho Department of Lands, a Stream Channel Alteration permit from the Idaho Department of Water Resources, and an U.S. Army Corps of Engineers 404 permit. In addition, any clearing of natural obstructions in the waterways are coordinated with Idaho Department of Fish and Game, and the adjacent property owners. Districts have liability for all work performed, and can sue, and be sued.

Normally, a cost sharing of 50 percent with landowners is required for work adjacent to, or on their property that is within the flood areas of the district. Gravel removal is normally done by cities and counties, with most of the costs paid by these entities.

Landowners and developers cannot build new levees and dikes, but can raise and maintain existing ones. Levees, dikes, and jetties are usually owned by the property owner. A dike is considered to be the same as a levee. A jetty projects out into the river channel, and is used to deflect water away from structures, etc. Jetties are normally two feet high, or less, and slope downward from the bank into the river channel.

Idaho Military Division

Bureau of Disaster Services

The BDS functions as a coordination center during a disaster, such as flooding, provides restoration relief after the disaster, and has mitigation programs to reduce the effects of future disasters. Normally, local communities such as counties and cities first respond to a disaster such as a flood event. If the flood magnitude is larger than the local community can handle, then the BDS is called upon for assistance. During the flood event, the BDS performs a coordination role with other state and local agencies to respond to the event. If the flood event is larger than state and local community resources, then federal assistance is provided through the FEMA. The BDS also coordinates with FEMA during the flood event, and the following restoration and mitigation work.

Following a flood event, BDS administers federal assistance money provided through FEMA in a cost sharing of 75 percent federal and 25 percent state and local. State and local communities decide how the funds are to be used under federal guidelines. Each disaster is handled differently, and the local communities are responsible for doing recovery work and mitigation of the flood event.

The BDS administers funds from FEMA for restoration and mitigation work in three parts:

- **Part I** - Funds are provided to restore public property such as buildings that have no source of federal funding. The

money is used to restore property to its pre-flood condition.

- **Part II** - Funds are provided as assistance to individual homeowners that do not have flood insurance. Homes are restored to their pre-flood condition, or are removed and relocated outside the floodplain as a mitigation measure.
- **Part III** - The BDS administers the flood mitigation program that provides 15 percent of the total cost of the disaster to reduce the effects of a future event. Mitigation measures may include removal of buildings in the floodplain, relocation, flood-proofing structures, and increasing culvert sizes. Property cannot be condemned, and all work must be on a volunteer basis by the owners. The counties are responsible for carrying out the mitigation measures.

The Bureau of Disaster Services also provides an all-hazards emergency management training and exercise program. The Professional Development Series training program provides basic skills and abilities required by emergency management professionals. The Applied Practices Series provides practical skills required in an "how to" environment.

Idaho Department of Lands

All encroachments into lakes and reservoirs within Idaho require a Lake Encroachment permit from the Idaho Department of Lands. This is required by the *Idaho Lake Protection Act, Section 58, et seq., Idaho Code*. Adams County, and that portion of Idaho County in the Little Salmon River basin, is administered by the Payette Lakes Area Office at McCall. This permit, along with the U.S. Army Corps of Engineers and Idaho Department of Water Resources permits may be made with a Joint Application.

Idaho Transportation Department

The Idaho Transportation Department probably has the most single extensive source of resources available to respond to flood and landslide emergencies and disaster recovery. With its revenue base (state motor

fuel tax), labor, equipment, materials, and staff of engineering and contracting specialists, the Department can quickly respond to damage along U.S. Highway 95, and assist local highway districts with repairs. Along with emergency repairs conducted by highway maintenance crews, disaster recovery contracts can be awarded for re-construction of destroyed and damaged sections of U.S. Highway 95.

Idaho Geological Survey

The Idaho Geological Survey is the special public service and research agency at the University of Idaho mandated by law to collect and disseminate geologic and mineral data for the state. The Idaho Geological Survey has extensive data and maps relating to landslides and geologic data associated with landslides and earth movement.

Idaho Department of Commerce

The Division of Community Development of the Idaho Department of Commerce provides financial and technical assistance to Idaho's cities and counties in the construction and rehabilitation of critical infrastructure to support economic diversification, expansion, and sense of community.

Idaho Soil Conservation Commission

Watershed Improvement Districts

Watershed Improvement Districts may be established in the state under *Idaho Code Title 42, Chapter 37*. The districts may be organized within one or more counties, and the boundaries of the District may transcend county boundaries. Districts are organized by a petition of at least 15 landowners to the Idaho Soil Conservation Commission, which appoints a director to act with two elected directors of the district. The directors of the district have the power to levy taxes, to conduct surveys, to develop comprehensive plans, and to construct, operate, and maintain facilities for flood control and other purposes.

Under the United States Watershed Protection and Flood Prevention Act (*U.S.C., Title 16 Sections 1001-1008*), the district can construct, operate, and maintain structural works for the prevention of floodwater and sediment damages, and the conservation, development, utilization, and disposal of water. The district has the right of eminent domain for the construction, operation, and maintenance of its structures, waterways, dikes, dams, basins, and other facilities. The district can borrow money and issue bonds, enter contracts, purchase, lease and sell property, and sue and be sued. Normally, money from taxes is accumulated to construct projects, but funding can also be obtained from U.S. Department of Agriculture Natural Resources Conservation Service.

After being organized, the districts are under the oversight of the State Engineer, Idaho Department of Water Resources. There are 11 organized districts in the state, mostly in northern and eastern Idaho, and none in the Little Salmon River basin.

Soil Conservation Districts

Soil Conservation Districts are created by petition with the Idaho Soil Conservation Commission and are organized to function in the territory described in the petition. In the Little Salmon River basin, there are two Soil Conservation Districts: Adams Soil and Water Conservation District, and Idaho Soil and Water Conservation District. The district boundaries are at the county line near Pinehurst.

The districts and their supervisors have the power to:

- Conduct surveys, investigations, and research relating to the character of soil erosion, floodwater and sediment damages, for the conservation, development, utilization, and disposal of water, and the prevention, control measures and works of improvement needed,

- Conduct demonstration projects within the district on state lands, and on any other lands with the owners' consent. These demonstration projects would include works for improvement of flood prevention, and the conservation, development, utilization, and disposal of water.
- Carry out preventive and control measures and works of improvement for flood prevention or the conservation, development, utilization, and disposal of water within the district.
- All other powers are described in *Idaho Statute 22-2722* relating to soil conservation, flood prevention, and erosion control.

Funding and assistance for the districts is provided by federal aid through the Natural Resources Conservation Service, through County General Funds, and the Idaho Resource Conservation and Rangeland Development Fund allocated by the Idaho Soil Conservation Commission. Funds administered by the Idaho Soil Conservation Commission may be in the form of loans, grants, or cost-sharing.

9.3 Local Governments

Adams County

Floodplain Management Administrator

To participate in the National Flood Insurance Program, a community must adopt and enforce a floodplain management ordinance that regulates development in the community's floodplain. Adams County Ordinance 1981-5 and 1988-1 includes this floodplain requirement, and the Floodplain Administrator is appointed annually by the Board of County Commissioners. In addition, Section G, Article VI (1988-1), regulates development in Areas of Critical Concern, such as avalanche paths, and unstable soils, as well as the floodplain. Hazardous or unique areas may be designated as an area of

critical concern by the County Commissioners.

City of New Meadows and Pinehurst

Both New Meadows and Pinehurst are covered by the Floodplain Ordinances and Administrator of Adams County.

Idaho County

Floodplain Management Administrator

Idaho County adopted a Flood Damage Prevention Ordinance (#36) on April 14, 1997. The Floodplain Administrator is designated by the Board of Idaho County Commissioners.

Pollock

Pollock is under the Floodplain Ordinances and Administrator of Idaho County.

Riggins

The City of Riggins adopted a Flood Damage Prevention Ordinance (#133) on February 19, 1997. The City Council was appointed to administer and implement this ordinance.

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SCALE 1:200,000
1 inch = 3.16 miles

Map Index: Flood Insurance Rate Maps and Landslides

This map is not for use in administering the National Flood Insurance Program; it is intended to be a general representation of the floodplain within the Little Salmon River Basin.

Floodplain maps screen digitized from the following National Flood Insurance Rate Maps at a minimum scale of 1:24,000 and a maximum scale of 1:12,000 -

Flood Insurance Rate Map, Idaho County;
Effective Date: September 27, 1991

Flood Insurance Rate Map, City of Riggins;
Effective Date: December 19, 1997

Flood Insurance Rate Map, Adams County;
Effective Date: November 20, 2000

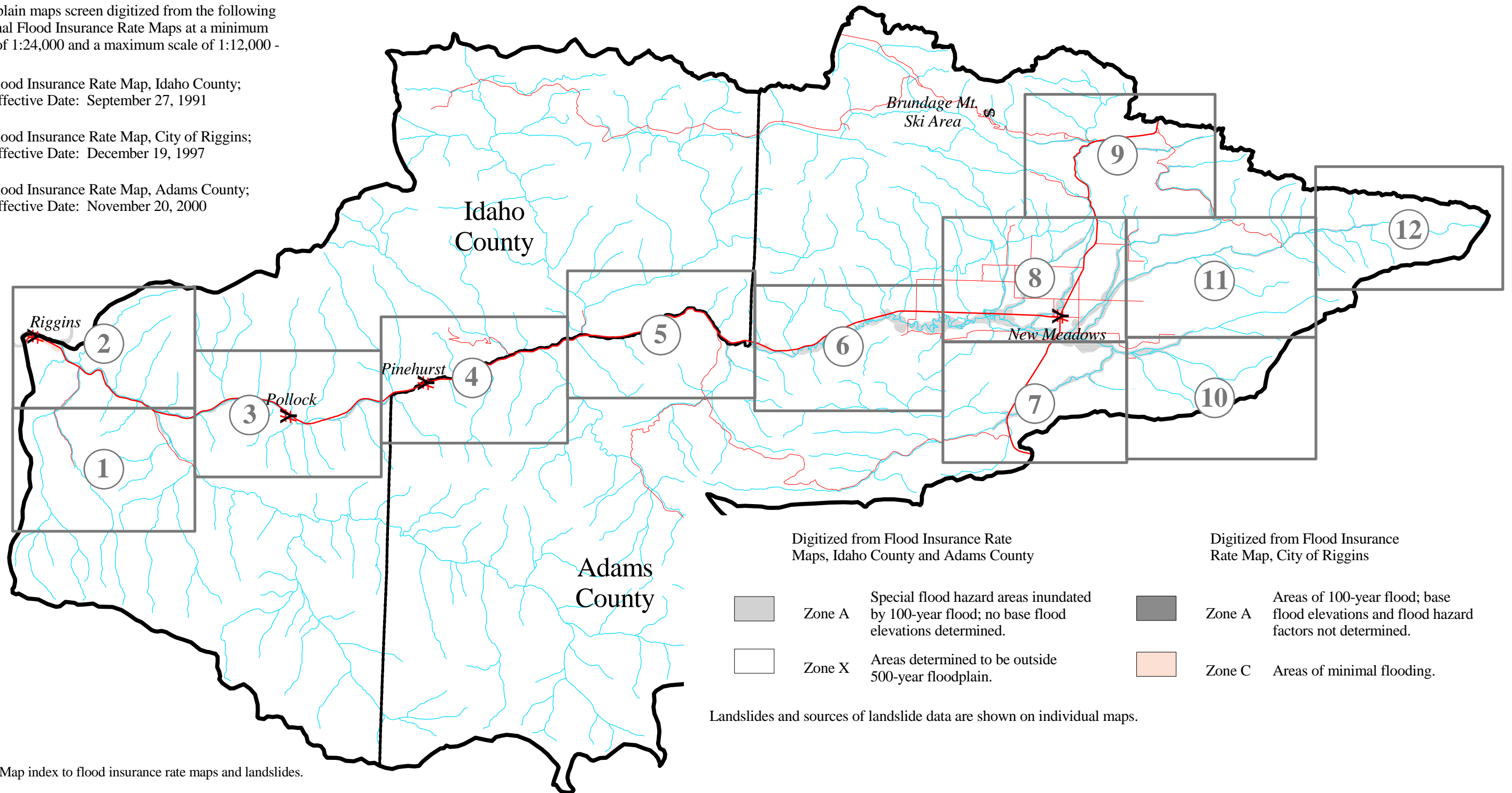


Figure 4. Map index to flood insurance rate maps and landslides.